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ART. III. — *The North American Sylva; or a Description of the Forest Trees of the United States, Canada, and Nova Scotia; considered particularly with Respect to their Use in the Arts and their Introduction into Commerce. To which is added a Description of the most useful European Forest Trees, illustrated by 156 colored Engravings.* Translated from the French of F. ANDREW MICH AUX, Member of the Philosophical Society of Philadelphia, etc., etc., with Notes by J. JAY SMITH, Editor of the Horticulturist, Member of the Academy of Natural Sciences, etc. In three volumes. Philadelphia: D. Price and N. Hart. 1857.

THE name of Michaux has been intimately associated with American botany for nearly three quarters of a century. With the ardor of science both father and son explored the rugged mountains and fertile valleys of every section of the Union, gleaning not only from the woods and fields, but from the workshops and dock-yards, an immense amount of useful information. They were not of that class of collectors who compass sea and land to transfer new plants to their herbariums for the mere pleasure of possession; but they were eminently practical men, separating themselves from their fatherland, and undergoing privations and dangers for the advancement of science and the benefit of mankind. Above all botanists they deserve the honor of two great nations, to both of which their labors were a national benefit, by introducing to notice and developing the sylvan resources of our country, and transporting to their own and acclimating the most important species of the North American forest-trees employed in the mechanic arts.

Not satisfied with the services already conferred upon us, François André Michaux, who recently died in Paris at the advanced age of eighty-five, has bequeathed to societies in Boston and Philadelphia liberal sums, as a testimonial of his heartfelt gratitude for the hospitality and assistance which his father and he had received in this country during the course of their long and toilsome journeys.

Having studied botany under the celebrated Jussieu, the Michauxs were particularly qualified by education, as well as by natural taste, to fulfil the commission of the French government, in exploring the woods of North America, with the view of establishing nurseries of her valuable forest-trees, for the purpose of transmitting them to France. It was with this purpose that André Michaux, with his son, a lad of fifteen years, sailed in 1785 for New York. Arriving there, they bought a plot of ground near the city, in New Jersey, and another in Charleston, S. C., to which places they constantly transmitted the various trees and seeds collected in their travels, and from which they were eventually shipped to France.

Living as we do in a country abounding with gigantic forests composed of a great variety of trees, most of our readers will doubtless be surprised to learn how small is the number of those which in France attain any great size. Michaux enumerates but thirty-six species which reach the height of thirty feet, eighteen of these forming together the principal forest growth, and seven only of use in civil and naval constructions; while he alone had observed in the North American forests no less than one hundred and forty species of the above-named height, a large proportion of them useful in the arts. The swampy lands of France produce no wood of any value, while the same sort of soil here is covered with noble trees, such as the Red Elm, Willow Oak, White Cedar, and Black and White Cypress. The sandy and the poorer cretaceous soils of France give growth only to dwarfish and insignificant Pines, while the equally arid lands of our Southern States produce an abundance of the Live Oak, a tree of unequalled value in naval architecture.

During the eleven years the two Michauxs spent in this country they traversed it in all directions, gathering up valuable materials to enrich their native land, which meantime, convulsed by civil wars, and fighting single-handed with the whole of Europe, could no longer afford to pay her naturalists abroad. Consequently Michaux was forgotten, and ceased to receive his salary. After the sacrifice of a portion of his own and his son's fortune, they were obliged to return

home, but were unfortunately shipwrecked on the coast of Holland, and lost the best part of their immense collections.

The elder Michaux never again set foot in America; but spent his time in cultivating the vegetable treasures which he had forwarded from the United States, and in arranging the materials for the "*Histoire des Chênes d'Amérique*," and the "*Flora Borealis Americana*," until he accepted the situation of naturalist in a scientific expedition bound to the Australian seas. Abandoning this at Mauritius, he went to Madagascar, where his useful life was terminated, in 1803, by the fever of the country.

François André, commonly called the younger Michaux, made two more voyages to this country (remaining each time three years), under the patronage of the French government; particularly devoting his attention to the collection of materials for his great work, the title of which stands at the head of this article. For this purpose he visited the principal ports to examine the timber employed in ship-building, and entered workshops of every description where wood was wrought. The knowledge of which he stood in need being principally in the possession of mechanics, he accordingly consulted the most skilful workmen, and, by means of a series of questions previously prepared, procured a great mass of new and practical information.

The first volume of the French edition, entitled "*Histoire des Arbres Forestiers de l'Amérique du Nord*," appeared in 1810, the second in 1812, and the third in 1813. This magnificent work, illustrated by one hundred and forty-four copper-plates, designed by the two Redoutés and by Bessa, and engraved by such eminent artists as Gabriel, Renard, Boquet, Bessin, and Dubreuil, was translated into English by an American, Augustus L. Hillhouse, and published in Paris in three volumes, 1817-19, under the name of "*The North American Sylva*," with the addition of several plates and some new observations by the author. Mr. William Maclure afterwards purchased the plates in Paris, and brought them to this country, to which circumstance is due the publication of three American editions. The first was issued at New Harmony, Indiana, by Maclure, on inferior paper, and

with poor type, with the laudable design of rendering it a cheap edition accessible to all. After MacLure's death the plates were presented by his executor to Dr. Morton of Philadelphia, and from these an edition was printed, in 1852, with notes by John Jay Smith. A reprint of this edition was destroyed by fire at the bindery in 1854; but the copper-plates, which were in another building, were preserved.

The publishers of the present edition have spared no expense in rendering these volumes acceptable to the public. The addition of Nuttall's *Sylva* makes the work more comprehensive, by including the results of the labors of that naturalist in our new Western States, Oregon, and California, and carries out the idea suggested by Michaux himself. Nuttall's two volumes are uniform with Michaux's *Sylva*, and can be purchased separately.

Rarely has a valuable scientific work been issued from the American press so perfect in all its appointments, its intrinsic worth enhanced by the beauty of paper, type, plates, and binding, each reflecting on the other additional lustre. It is pleasant to find that so expensive an edition of a standard work was called for by the public, and we hope that the enterprising publishers will be fully remunerated for their great outlay. For our own part, we must confess a penchant for fine paper and typography, and have always held our well-used copy of the Paris imprint of Michaux, with its wire-woven and cream-tinted pages, in high estimation; but the subject of this review, in its enlarged form, clear type, and brilliancy of coloring, as it lies by the side of its elder sister, fairly bears away the palm from the old favorite.

The notes by J. J. Smith are serviceable, and he has shown good taste in keeping them within narrow limits; but we do not understand why Michaux's Introduction is omitted. One paragraph of this we quote from the edition of 1819, as it has a peculiar bearing upon our country. The same idea is constantly reiterated throughout the book, but for these many years the warning voice has fallen unheeded upon the dull ear of the federal government:—

“I have endeavored to impress on the American farmers the advantage of preserving and multiplying some species, and of destroying

others; for, in my opinion, a bad tree should not be suffered to exist where a good one might grow, and in no country is selection more necessary than in North America. It may not be improper to observe, that the Europeans have great advantages over the Americans in the management of woods. The principal forests are in the hands of the governments, which watch over their preservation with a solicitude dictated by imperious necessity. Experience has amply demonstrated, that no dependence can be placed for the public service, or the general supply, upon forests that are private property; falling sooner or later into the hands of persons eager to enjoy their price, they disappear and give place to tillage. In America, on the contrary, neither the federal government nor the several States have reserved forests. An alarming destruction of trees proper for building has been the consequence, — an evil which is increasing and which will continue to increase with the increase of population. The effect is already very sensibly felt in the large cities, where the complaint is every year becoming more serious, not only of the excessive dearness of fuel, but of the scarcity of timber. Even now, inferior wood is frequently substituted for the White Oak; and the Live Oak, so highly esteemed in ship-building, will soon become extinct upon the islands of Georgia.”

Why cannot the general government be induced to reserve some of its immense tracts of woodland for the public use? Most of the sovereign States of the Union still hold, we believe, uncultivated lands, which, particularly on the Atlantic coast, ought by legislative enactments to be converted into State forests, like the royal woods and chases of Europe. Such a treasury of notes, to be discounted by the Bank of Nature, for the benefit of our posterity, would not be subject to suspension, and would be the safest public debt to transmit to our successors.

Forty or fifty years ago, great fears were entertained that the forests would become extinct in this country; but since the introduction of coal into common use, this popular fear has unfortunately abated. Unfortunately, we say; for although the domestic consumption of wood for fuel is no longer a patent fact to the eye of the most casual observer, yet the waste of wood is increasing rather than diminishing, as the railroads are gradually weaving their iron webs amid the primeval forests of the North, South, and West, and that dragon, the locomotive, daily consumes in its insatiable

jaws the growth of hundreds of acres. Year by year the pine forests of Maine, considered as an inexhaustible stock of masts, are gradually receding before the axe ; with the snows of every winter the camp-fires are lighted nearer the headwaters of the great rivers, and, unless some active measures are taken by government or individuals, the loss to the country will be incalculable.

In the time of Charles I. the waste of the forests had become so great in England, that government took the alarm, and Evelyn was appointed by the Royal Society, at the command of the king, to repair, if possible, this loss. In the Introduction to his world-renowned Sylva he remarks : —

“This devastation has now become so epidemical, that, unless some favorable expedient offer itself, and a way be seriously and speedily resolved upon, for a future store, one of the most glorious and considerable bulwarks of the nation will within a short time be totally wanting to it.

“After due reproof of the late impolitic waste, we should now turn our indignation into prayers, and address ourselves to our better-natured countrymen, that such woods as do yet remain entire might be carefully preserved, and such as are destroyed sedulously repaired. It is what all persons who are owners of land may contribute to, (and with infinite delight, as well as profit,) who are touched with that laudable ambition of worthily serving their generation.”

These remarks apply as well to this country as to England. Evelyn by his labors and writings stirred up in the British mind that “laudable ambition,” and Nelson’s victories were gained in ships built from the oaks which Evelyn’s hands had planted.

The numerous vessels which the present Emperor of France is so diligently adding to his navy are doubtless built from trees planted by the Michauxs, some of which have been growing seventy years in the national demesnes.

Another Evelyn is needed, to sound throughout our land a parenesis, to awaken the man of fortune and the farmer to the necessity of protecting and planting trees ; for if government will do nothing, the only alternative is to induce individuals to undertake the work. Men seldom plant trees until they grow old, and find by experience the necessity of it.

When Ulysses, after ten years' absence, returned from Troy, and found his aged father in the field planting trees, he asked him "why, being so far advanced in years, he would put himself to the fatigue and labor of planting that of which he was never likely to enjoy the benefit." The good old man, taking him for a stranger, gently replied: "I plant them for my son Ulysses when he comes home." So among us let the old plant for their children, and the young follow them in the good work.

"Agite, adolescentes, et antequam canities vobis obrepat, stirpes jam alueritis, quæ vobis cum insigni utilitate delectationem etiam adferrent; nam quemadmodum canities temporis successu, vobis insciis, sensim obrepit, sic natura vobis inserviens educabit quod telluri vestræ concredetis, modo prima initia illi dederitis."*

The oracular Johnson remarks: "There is a frightful interval between the seed and the timber. He that calculates the growth of trees knows that he is doing what will never benefit himself, and, when he rejoices to see the stem rise, is disposed to repine that another shall cut it down." This assertion is easily controverted by the calculations of English planters, who have estimated that "a single acre planted with the poplar or larch will, in favorable situations, and in no longer period than twenty years, yield a produce worth ten times the fee simple of the land." The lower price of labor and higher value of wood in Great Britain are about balanced in this country by the lower value of land. Sir Walter Scott, who was a practical planter, found that in eleven years the necessary cuttings and trimmings from a larch plantation would pay the expenses attendant upon the first setting out, fencing, and rent of land; after which period the value increases in a compound ratio.

Although numerous changes have been made in botanical nomenclature since the first publication of the North American Sylva, yet this work has always held a high rank in the estimation of scientific men, and must continue a standard book, to which both learned and unlearned will constantly refer, and whose value time cannot impair.

* Pet. Bellonius, De Neglecta Stirpium Cultura.

The general plan adopted in this magnificent work is that of illustrating each species described, by a drawing of a branch of the tree, with its leaves, flowers, and fruit. These drawings and engravings are admirably executed. The letter-press contains, first, a short Latin description of the species; then follow in English the locality where it most abounds, the growth and appearance of the tree in its native forests, the uses to which it is applied in various places, its adaptation to the several mechanic arts, the different names by which it is known to the country people, and any other local information the author could obtain.

The first volume commences with the Oaks, which are arranged in a natural series, and separated into two divisions and five sections. This grouping of the family has been generally followed by later botanists. Emerson, in his Report on the Trees and Shrubs of Massachusetts, adopts it as the best. In this volume, twenty-eight species of Oaks are depicted and described, and Nuttall's supplement adds six new species of our Western States unknown to Michaux. Of this valuable family, the Black Oak, *Quercus tinctoria*, and the White Oak, *Quercus alba*, are particularly recommended for planting in the Northern and Middle States. The Live Oak, *Quercus virens*, and the Cork Oak, *Quercus Suber*, are the species which should be most highly valued at the South. From the last-mentioned species France alone manufactures annually twenty-six millions of corks, which sell at one dollar seventy cents per thousand. Speaking of the Cork Oak, our author says:—

“This tree would be an important acquisition to the United States, and would grow wherever the Live Oak subsists. It has great advantages over several other species, such as the Olive and the White Mulberry. To fit their produce for consumption, particularly that of the Mulberry, requires complicated processes, which can be performed with advantage only in populous countries. The bark of the Cork Oak, on the contrary, might be transported to the Northern States, or might be made into corks upon the spot by a simple operation performed by a single person with instruments of which the price does not exceed two or three dollars.” — Vol. I. p. 57.

We are glad to learn, from the Patent-Office Report of

1855, that government has at length imported the acorns of the Cork Oak, and distributed them at the South. After giving an account of the tree, and of the periods at which the bark can be cut, the Report adds:—

“The comparatively long time which is necessary for its growth, before much if any profit can be realized, should not deter the prudent or sagacious husbandman from extending its culture. Considering it in a politic as well as economical sense, seasonable measures should be taken to form plantations of this tree, sufficient for the future supply of cork, particularly for the increasing demands for that material which are likely to arise from the culture of the vine. . . . It may be stated that the amount of cork which is yearly imported into the United States is valued at more than 284,000 dollars.”—p. xx.

Good corks cannot be made from the bark until the Oak has attained the age of forty years. Had Michaux's hints been taken on the first publication of his work, we should now be entirely independent of the Old World in regard to this article of constant use.

The seventeen species of Pines indigenous to the United States are most perfectly figured, and one who has lived amid the pine forests of Maine scarcely knows which to admire the most, the illustrations, the graphic descriptions, or the amount of local information which the author has given us.

The Wild Pine, or Scotch Fir, *Pinus sylvestris*, a European species, is recommended for cultivation.

“It is seen flourishing on sandy wastes exposed to the saline vapors of the sea, and, which is more remarkable, on calcareous lands, a large tract of which in the Department of the Marne, called *la Champagne pouilleuse*, has begun within forty years to be covered with it after lying desert from time immemorial. The proprietors who first conceived this fortunate plan have already seen their barren ground acquire a tenfold value.”—Vol. III. p. 101.

The latter years of Michaux's life were particularly spent in experimenting upon those heaths, which occupy two millions of acres in France. In a letter to the President of the Philosophical Society, shortly before his death, he speaks of the last-named pine as the one to which he gives the preference over all with which he has experimented, and recommends it to the particular attention of agriculturists in the Northern and Middle States of the Union.

Time would fail us to enumerate the variety of useful and ornamental trees which these volumes describe; but we trust that enough has been said of the general outline and scope of the work to interest every one who is not already familiar with its charming pages. To those who have long known and appreciated its worth, the beauty of the present edition will lend new attractions to an old friend.

At the time of Michaux's death, he was preparing a work for publication, — the result of his practical experience, — for the benefit of the landholders of the United States. Let us hope that this will not be lost to us; but that able hands will put together the material he has left, and publish it, even in an unfinished state, that the experience of a life of eighty-five years may shed additional lustre upon the honored name of Michaux, and keep his memory green among American arboriculturists.*

ART. IV. — *Life and Times of Alexander Hamilton.* By SAMUEL M. SMUCKER, A. M. Boston and Chicago: L. P. Crown & Co. 1857.

THE absence of dramatic material in our history has often been remarked. Eloquent writers have had recourse chiefly to its moral aspects to render their narratives spirited and attractive; and when Napoleon sneered at the limited and homely means whereby our independence was gained, Lafayette defended the claims of the land in whose behalf his youth was devoted, by reference to the greatness of the cause which had thus triumphed and the prospective and incalculable national growth which had thence resulted. The intensely practical character of the struggle, its prudential and unpicturesque method, the utilitarian habits of the people, the poverty of the

* F. A. Michaux died of apoplexy on the 23d of October, 1855. By his will he left to the American Philosophical Society the sum of fourteen thousand dollars, and to the Society of Agriculture and Arts in Boston eight thousand, for special purposes connected "with the progress of agriculture with reference to the propagation of useful forest-trees."